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1939

**COMMONWEALTH OF PENNSYLVANIA**  
**DEPARTMENT OF INTERNAL AFFAIRS**

**TOPOGRAPHIC AND GEOLOGIC SURVEY**  
**HARRISBURG**

October, 1939

**SERVICE**  
**and**  
**LIST OF PUBLICATIONS**

The Topographic and Geologic Survey's job is to map Pennsylvania and to get and give information on its mineral resources, their occurrence, character, possible use and value, and on the surface features, geology, soils, and ground water of the State.

Inquiries on these subjects are answered promptly and as fully as the information at hand warrants, either by letter or by reference to its own published reports or to other sources of information. The Survey will gladly identify and appraise mineral or rock specimens but does not make assays or analyses for the public. Rarely are these necessary.

Publications on the geology and mineral resources of Pennsylvania are listed on the following pages. They may be consulted in many public libraries, or purchased from the sources indicated.

Unless otherwise stated the reports of this Survey listed can be obtained *only* at the prices given and only from

Division of Documents  
Department of Property & Supplies  
10th and Market Streets  
Harrisburg, Pa.

Remittance should be made in cash, or by money order or check, payable to the Commonwealth of Pennsylvania. Stamps are not accepted.

United States Geological Survey reports can be obtained only in Washington, D. C., as explained on page 10.

**DO NOT SEND MONEY TO THE SURVEY**

Publications checked in red may be of interest to you. Those out of print are on file in many public libraries throughout the State. Names of dealers in second-hand books will be furnished on request.

Knowledge is power. It pays to know. Ask us.

*Geo. H. Ashley*

State Geologist.

## LIST OF PUBLICATIONS

The publications fall mostly into five series, designated by letters. A. Atlas, topographic, geologic, and mineral resource maps and description, by quadrangles. C. County Reports. G. General Geology. M. Mineral Resources. W. Ground Water Resources.

### A SERIES—TOPOGRAPHIC AND GEOLOGIC ATLAS

(See map)

- A 5. New Castle Quadrangle, by Frank W. DeWolf. 1929. 238 pp., 18 pls. including 1 topographic and 4 geologic maps, 17 figs. \$1.00.
- A 27. Pittsburgh Quadrangle, by Meredith E. Johnson. 1928. 236 pp., 33 pls. including 1 topographic and 3 geologic maps, 28 figs. \$1.00.
- A 36. Freeport Quadrangle, by H. H. Hughes. 1933. 272 pp., 10 pls., 72 figs. including 1 topographic and 2 geologic maps. \$1.75.
- A 37. Greensburg Quadrangle, by Meredith E. Johnson. 1926. 162 pp., 13 pls., 25 figs. including 1 topographic and 3 geologic maps. Out of print.
- A 55. Punxsutawney Quadrangle, by Geo. H. Ashley. 1926. 145 pp., 6 pls. including 1 topographic and 3 geologic maps, 26 figs. Out of print.
- A 75. Curwensville Quadrangle, by Geo. H. Ashley, 1940. (In press).
- A 96. Tyrone Quadrangle, by Charles Butts, F. M. Swartz, and Bradford Willard. 1939. 116 pp., 14 pls., including one geologic map and cross sections, 4 figs. \$1.00.
- A 168. Lancaster Quadrangle, by Anna I. Jonas and George W. Stose. 1930. 103 pp., 23 pls., including 1 topographic and 1 geologic map, 10 figs. \$1.00.
- A 178. New Holland Quadrangle, by Anna I. Jonas and George W. Stose. 1926. 40 pp., 7 pls., including 1 topographic and 1 geologic map. Out of print.
- A 206. Allentown Quadrangle, by B. L. Miller. 1926. 195 pp., 15 pls., including 1 topographic and 1 geologic map, 2 figs. Out of print.

### C SERIES—COUNTY REPORTS

- C 1. Adams County
  - Part II. Mineral Resources, by George W. Stose. 1925. 64 pp., 11 pls., including 1 colored map, 1 fig. Out of print.
  - Part III. Soil Survey, by A. L. Patrick and H. H. Bennett. 1924. 44 pp., 1 colored map. Out of print.
- C 1. Geology and mineral resources of Adams County, by George W. Stose. 1932. 153 pp., 26 pls., including a topographic and a colored geologic map, 11 figs. \$1.00.
- C 26. Geology and mineral resources of Fayette County, by W. O. Hickok, IV. and F. T. Moyer (In press).
- C 30. Geology and mineral resources of Greene County, by Ralph W. Stone. 1932. 175 pp., 3 pls., including a topographic and a geologic map, 56 figs. \$1.00.
- ✓ C 48. Northampton County, Geology and Geography by B. L. Miller; with chapter on Pre-Cambrian geology by D. M. Fraser and on the Jacksonburg formation by R. L. Miller. 1939. 496 pp., 29 pls., 36 figs., including geologic map 31 by 32 inches. \$2.25.
- C 67. Geology and mineral resources of York County, by Geo. W. Stose and Anna I. Jonas. 1939. 195 pp., 38 pls., 14 figs., including geologic map 40 by 50 inches. (In press).

## G SERIES—GENERAL GEOLOGY

- ✓ G 1. A syllabus of Pennsylvania geology and mineral resources, by George H. Ashley. 1931. 160 pp., 2 plates, including a small colored geologic map, 118 figs. A story of Pennsylvania's rocks, minerals and mineral industry, and the development of the surface features, written expressly for people who have not studied the subject. 30 cents.
- ✓ G 2. Meteorites found in Pennsylvania, by Ralph W. Stone. 1932. 28 pp., 14 figs. A compilation of all publications on five meteorites. 10 cents.
- ✓ G 3. Pennsylvania Caves, by Ralph W. Stone. 1932. 143 pp., 68 figs. Describes 14 caves open to the public, and about 70 undeveloped caves. 25 cents.
- ✓ G 4. Devonian Faunas in Pennsylvania, by Bradford Willard. 1932. 43 pp. Lists of certain Middle and Upper Devonian faunas, citing localities where collected. Of interest only to students of fossils. 15 cents.
- ✓ G 5. Correlation of the Ordovician limestone at Salona, Clinton County, by Lawrence Whitcomb. 1932. 16 pp., 1 pl. A discussion of the lithology and correlation of Trenton limestone exposed at Salona. 15 cents.
- ✓ G 6. Scenery of Pennsylvania, by George H. Ashley. 1933. Its origin and development, based on recent studies of physiographic and glacial history, as interpreted by Geo. H. Ashley. 91 pp., 1 pl., 90 figs. 35 cents.
- ✓ G 7. Glacial deposits outside the Wisconsin terminal moraine in Pennsylvania, by Frank Leverett. 1934. 140 pp., 1 pl., 38 figs. Out of print.
- ✓ G 8. A Paleozoic section in south-central Pennsylvania, by Bradford Willard and Arthur B. Cleaves. 1938. 38 pp., 10 pls. Describes the geology from Highspire through Harrisburg to Newport, a stratigraphic succession from Lower Ordovician to Triassic. 25 cents.
- ✓ G 9. The Geomorphology of the Wyoming-Lackawanna Region, by Harry Augustus Itter. 1938. 82 pp., 9 pls., 46 figs. Describes the evolution of the landscape. 25 cents.
- ✓ G 10. Recent geological history of the Delaware Valley below the Water Gap, by Freeman Ward. 1938. 76 pp., 10 pls. 13 figs. 25 cents.
- ✓ G 11. A Paleozoic section at Delaware Water Gap, by Bradford Willard. 1938. 35 pp., 9 figs. 25 cents.
- ✓ G 12. Highway geology from Philadelphia to Pittsburgh, by Bradford Willard. 1939. 42 pp., 17 pls. 25 cents.
- ✓ G 13. Guide to the geology from Dauphin to Sunbury, by Bradford Willard. 24 pp., 7 pls. 25 cents.
- ✓ G 14. Guide to the geology of the Upper Schuylkill Valley, by Bradford Willard. 1939. 23 pp., 1 pl., 8 figs. Description from Pottsville to Lessport. 25 cents.
- ✓ G 15. Guidebook to the geology near Reading, by Bradford Willard and Donald M. Fraser. 1939. 27 pp., 11 figs. 25 cents.
- G 16. Guidebook to places of geologic interest in the Lehigh Valley, by B. L. Miller. 1939. 23 pp., 24 figs. 25 cents.
- ✓ G 17. Guidebook to the geology about Pittsburgh, by Henry Leighton. 1939. 35 pp., 13 figs. 25 cents.
- G 18. Guidebook to the geology in the vicinity of Philadelphia, by E. H. Watson. Being written.
- ✓ G 19. The Devonian of Pennsylvania, by Bradford Willard, Frank M. Swartz and Arthur B. Cleaves. 1939. 450 pp., 32 pls., 95 figs. \$3.00.

# M SERIES—MINERAL RESOURCES

- M 1. Oil and Gas Fields of Pennsylvania, Vol. 1, Introduction, by George H. Ashley and J. French Robinson. 1922. 79 pp., 4 pls., 9 figs., 1 color map. A condensed, introductory description of the origin, mode of occurrence, and conditions of development of oil and gas, with a brief description of each of the oil and gas fields of the State; also a small scale reconnaissance map of the oil and gas fields. Out of print.
- M 2. Oil Resources in Coals and Carbonaceous Shales of Pennsylvania, by Chas. R. Fettke. 1923. 119 pp., 6 pls., 16 figs. Describes the petroleum situation, explaining methods of distilling coal and shale, and gives results of tests on 122 samples of coal and shale. Out of print.
- ✓ M 3. Silica Refractories of Pennsylvania, by E. S. Moore and T. G. Taylor. 1924. 100 pp., 16 pls., 10 figs. Describes the character, distribution, and quarrying of ganister and mica schist, and the properties, manufacture, and uses of silica brick. Out of print.  
WM 5  
c. 2
- ✓ M 4. Bituminous Coal Losses and Mining Methods in Pennsylvania, by James D. Sisler. 1924. 216 pp., 1 pl., 29 figs. Describes the distribution, thickness, character, and reserves of bituminous coal by districts, and indicates the source of loss and waste at the mines. Out of print.  
c. 2
- ✓ M 5. Lead and Zinc Ores of Pennsylvania, by B. L. Miller. 1924. 91 pp., 5 pls., 7 figs. A description of the distribution, geologic occurrence, and origin of the ores, and a history of mining operations. Out of print.  
WM-3
- ✓ M 6. Bituminous Coal Fields of Pennsylvania.  
c. 2  
Part I. General Information on Coal, by George H. Ashley. 1928. 241 pp., 17 pls., 32 figs. 50 cents.  
II. Detailed Description of Coal Fields, by J. D. Sisler. 1932. 511 pp., 14 pls., including 5 color maps, 152 figs. A report giving details of the bituminous coal beds. The description is by counties. 50 cents.  
III. Bituminous Coal Resources, by John F. Reese and James D. Sisler. 1928. 153 pp. 4 pls. 25 cents.  
IV. Analyses of Bituminous Coal. 1925. 268 pp., 1 pl. This report by the U. S. Bureau of Mines gives several hundred measurements and analyses of bituminous coal mined in Pennsylvania. 50 cents.
- ✓ M 7. Limestones of Pennsylvania, by B. L. Miller. 1925. 368 pp., 15 pls., includes 1 color map, 7 figs. Describes the character, origin, and uses of limestone and the geographic and geologic distribution of the principal deposits. The description of the limestone of each geologic age is arranged by counties. Out of print. (see M 20)
- ✓ M 8. Anthracite Losses and Reserves in Pennsylvania, by Dever C. Ashmead. 1926. 71 pp., 1 pl., 13 figs. This report gives the thickness and acreage of each bed in the anthracite field, the percentage of coal recovered in mining, explains how and why some anthracite is lost, and gives an estimate of the quantity of anthracite remaining in each bed, and in each of the four fields. Out of print.  
c. 2
- ✓ M 9. Slate in Northampton County, by C. H. Behre, Jr. 1927. 312 pp., 36 plates, 49 figures, 2 color maps. Describes the slate quarries in the Bangor, Wind Gap, Portland, Belfast, Chapman, Seemsville, Point Phillip, and Slatefield districts, with special reference to the geologic structure. Out of print. (see M 16)  
c. 2
- M 10. Fire Clays of Pennsylvania, by J. B. Shaw. 1928. 69 pp., 6 figs. 25 cents.
- M 11. Molding Sands of Pennsylvania, by R. W. Stone and American Foundrymen's Association. 1928. 94 pp., 21 pls., 10 figs. 25 cents.
- M 12. Anthracite Culm and Silt, by James D. Sisler, Thomas Frazer and Dever C. Ashmead. 1928. 259 pp., 34 pls., 21 figs. 50 cents.



- M 13. Feldspar in Pennsylvania, by R. W. Stone and H. Herbert Hughes. 1931. 60 pp., 20 pls., 6 figs. Out of print.
- M 14. Magnetite Deposits of French Creek, Pennsylvania, by Laurence L. Smith. 1931. 52 pp., 5 pls., 5 figs. Describes the French Creek magnetite mine at Saint Peters, Chester County. Out of print.
- ✓ M 15. Building Stones of Pennsylvania, by Ralph W. Stone. 1932. 316 pp., 4 pls., 164 figs. This report calls attention to the different kinds of building stone available and illustrates their uses. \$1.25.
- ✓ { M 16. Slate in Pennsylvania, by Charles H. Behre, Jr. 1933. 400 pp., 5 colored geologic maps, 65 other pls., 89 figs. The fullest description and discussion of the subject ever published. \$2.75.
- ✓ { M 17. Clay and Shale Resources of southwestern Pennsylvania, by Henry Leighton. 1933. 190 pp., 1 colored geologic map, 16 figs. 75 cents.
- ✓ M 18. The Minerals of Pennsylvania.  
A. Introduction by George H. Ashley. 1933. 15 pp.  
✓ c. 2 B. Iron Ores of Pennsylvania, by W. O. Hickok, IV. 1939. 21 pp.,  
C. Non-metallic Minerals, by R. W. Stone. 1939. 50 pp., 1 fig.  
(18 A, B, C obtained free from the State Geologist)
- ✓ M 19. Contributions to Oil and Gas Geology of western Pennsylvania, by J. D. Sisler, G. H. Ashley, F. T. Moyer and W. O. Hickok, 4th. 1933. 94 pp., 22 pls., 1 fig. Out of print.
- ✓ M 20. Limestones of Pennsylvania, by B. L. Miller. 1934. 729 pp., 41 pls., 34 figs. The primary purpose of this report is to furnish information concerning the limestones of the State to those persons or firms that are interested in their utilization. \$2.00.
- ✓ M 21. Bradford Oil Field, Pennsylvania and New York, by Chas. R. Fettke. 1938. 454 pp., 21 pls., 113 figs., including one geologic map. Describes water-flooding operations. \$3.00.

#### W SERIES—GROUND WATER RESOURCES

- ✓ { W 1. Ground Water in southwestern Pennsylvania, by Arthur M. Piper. 1933. 410 pp., 1 colored geologic map, 40 figs. A detailed description of the occurrence and character of ground water in Allegheny, Butler, Fayette, Greene, Washington, and Westmoreland counties. \$1.50.
- ✓ c. 2 { W 2. Ground Water in southeastern Pennsylvania, by George M. Hall. 1934. 255 pp., 1 colored geologic map, 7 pls., 7 figs. A detailed description of the occurrence and character of ground water in Adams, Berks, Bucks, Chester, Cumberland, Dauphin, Delaware, Franklin, Lancaster, Lebanon, Lehigh, Montgomery, Northampton, Philadelphia and York counties. \$1.25.
- ✓ W 3. Ground Water in northwestern Pennsylvania, by R. M. Leggette. 1936. 215 pp., 1 colored geologic map, 8 other pls., 15 figs. A detailed description of the occurrence and character of ground water in Armstrong, Beaver, Clarion, Crawford, Erie, Forest, Indiana, Jefferson, Lawrence, Mercer, Venango and Warren counties. \$1.50.
- ✓ { W 4. Ground Water in northeastern Pennsylvania, by Stanley W. Lohman. 1937. 300 pp., 1 colored geologic map, 6 other pls., 18 figs. A detailed description of the occurrence and character of ground water in Carbon, Columbia, northern Dauphin, Lackawanna, Luzerne, Monroe, Montour, Northumberland, Pike, Schuylkill, Susquehanna, Wayne and Wyoming counties. \$1.50.
- ✓ { W 5. Ground Water in south-central Pennsylvania, by Stanley W. Lohman. 1938. 315 pp., 17 pls., 11 figs., including colored geologic map and well location map. A detailed description of the occurrence and character of ground water in Bedford, Blair, Cambria, Centre, Clearfield, Clinton, Fulton, Huntingdon, Juniata, Mifflin, Perry, Snyder, Somerset and Union Counties. \$1.50.

**TOPOGRAPHICAL**

Georgi

42°

80°

79°

78°

FAIRVIEW  
LAKE  
ERIE  
NORTHEAST  
CLYMER  
CHAUTAQUA  
JAMESTOWN  
RANDOLPH  
SALAMANCA  
OLEAN  
BELMONT  
WELLSVILLE

CONNEAUT  
GRAPD  
CAMBRIDGE  
UNION CITY  
ERIE  
CRAWFORD  
YOUNGSVILLE  
WARREN  
KINZUA  
BRADFORD  
SMETHPORT  
COUDERSPORT  
GENESEE

ANDOVER  
LINESVILLE  
MEADVILLE  
TOWNVILLE  
TITUSVILLE  
TIDIOUTE  
SHEFFIELD  
KANE  
MT JEWETT  
COLLEGROVE  
CAMERON  
EMPORIUM  
SHORTRUN

KINSMAN  
SHENANGO  
STONEBORO  
FRANKLIN  
OIL CITY  
TIOGSTA  
MARIENVILLE  
BROOKWATER  
RIDGEWAY  
CALEDONIA  
DRIFTWOOD  
BITUMEN

YOUNGSTOWN  
NESHANNOCK  
MERCER  
HILLIARDS  
FOXBURG  
CLARION  
BROOKVILLE  
DU BOIS  
PENFIELD  
CLEARFIELD  
KARTHAUS  
SNOWSHOE

COLUMBIANA  
NEWCASTLE  
BUTLER  
KITTANNING  
RURAL VALLEY  
SMICKSBURG  
PUMSUUTANNY  
CURWENSVILLE  
HOUTZDALE  
PHILIPSBURG  
BELLEFONTE

WELLSVILLE  
BEAVER  
B286★  
F134★  
B318★  
F177★  
B318★  
F180★  
B300★  
F144★  
B304★  
F146★  
F121★  
F82★

SEWICKLEY  
NEWKENSINGTON  
FREETPORT  
ELDRIDGE  
INDIANA  
BARNESBORO  
PATTON  
ALTOONA  
BLAIR  
HUNTINGDON  
MT UNION  
ALLENVILLE

STEUBENSVILLE  
BURGETTSTOWN  
CARNEGIE  
PITTSBURGH  
GREENSBURG  
LATROBE  
NEW FLORENCE  
JOHNSTOWN  
EBENSBURG  
HOLIDAYSBURG  
HUNTINGDON  
BEDFORD  
EVERETT  
BROADTOP  
FULTON  
ORBISONIA  
MERCERSBURG

WHEELING  
WEST VIRGINIA  
CLAYSVILLE  
WASHINGTON  
GREENE  
ROGERSVILLE  
WAYNESBURG  
MASONSTOWN  
UNIONTOWN  
CONELICE  
MEYERSDALE  
BERLIN  
HYNDMAN  
CLEARVILLE  
NEEDMORE  
MERCERSBURG

AMITY  
BROWN  
COMPELLSVILLE  
FAYETTE  
DONEGAL  
SOMERSET  
WINDBER  
BEDFORD  
EVERETT  
BROADTOP  
FULTON  
ORBISONIA  
MERCERSBURG

W. VA.  
BRUCETON  
ACCIDENT  
GRANTSVILLE  
FROSTBURG  
FLINTSTONE  
PAWPAW  
HANCOCK  
WILLIAMS

80°

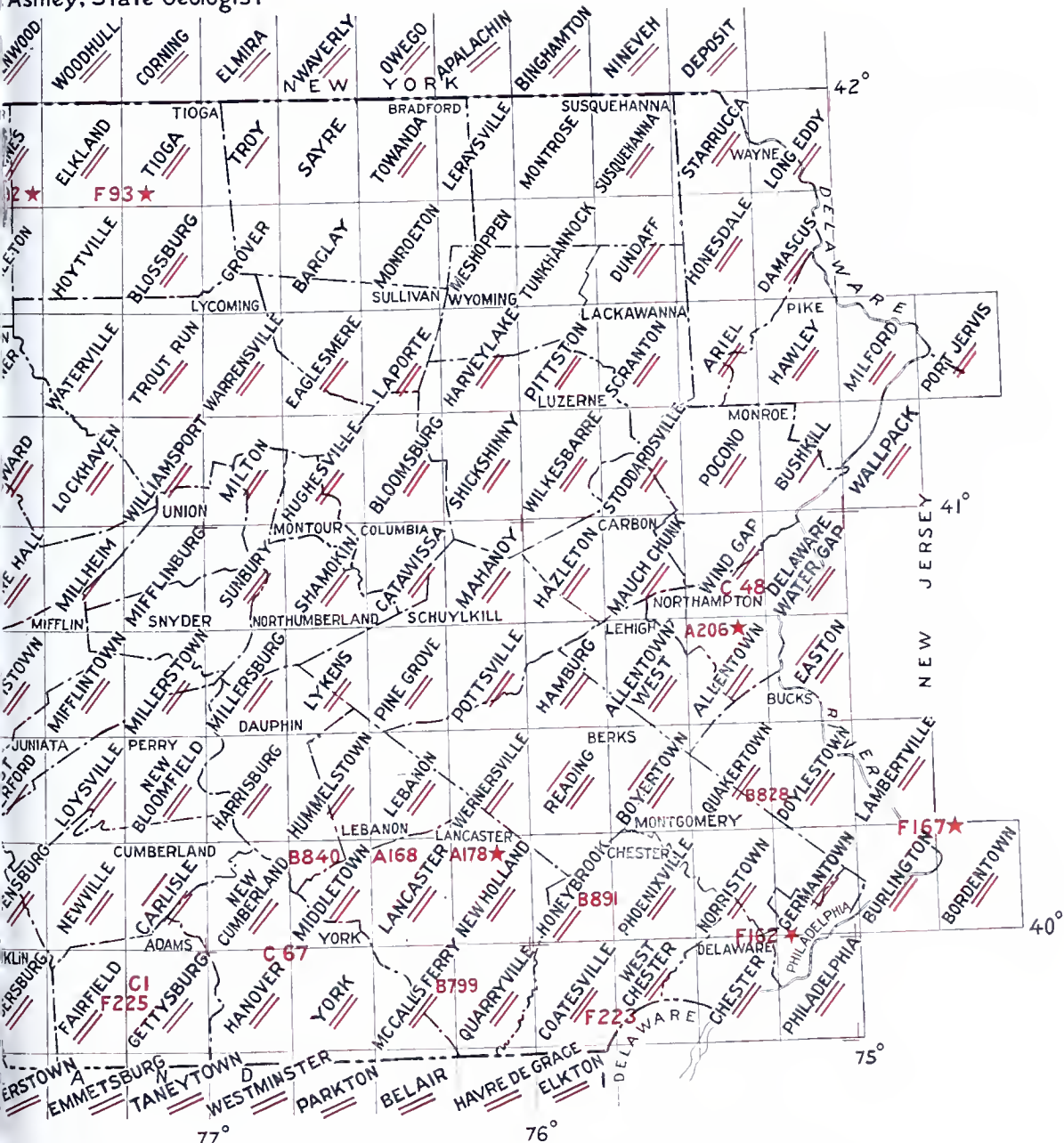
79°

78°

- INDEX TO TOPOGRAPHIC ANGL



# **DEPARTMENT OF PENNSYLVANIA** **DEPARTMENT OF INTERNAL AFFAIRS** S. Livengood, Jr., Secretary **AND GEOLOGIC SURVEY** Ashley, State Geologist



Pennsylvania Geological Survey. **R** Reports by number, Pennsylvania Geological Survey.  
 U.S. Geological Survey. **M** Mineral resources bulletin, Pennsylvania Geological Survey.  
 Geological Survey. **★** Stock exhausted, obtainable only from secondhand dealers.  
**GEOLOGIC MAPS OF PENNSYLVANIA**

- ✓W 6. Ground Water in north-central Pennsylvania, by Stanley W. Lohman. 1939. 220 pp., 11 pls., 13 figs., including colored geologic map and well location map. A detailed description of the occurrence and character of ground water in Bradford, Cameron, Elk, Lycoming, McKean, Potter, Sullivan and Tioga Counties. \$1.25.

PROGRESS REPORTS *Title to 100 on publications in Bull.*

Obtained free from the State Geologist, Harrisburg

- 102B. Physical characteristics of the Oriskany sandstone and subsurface studies in the Tioga gas field, Pennsylvania, by Charles R. Fettke. Stratigraphy of the Tioga Region, by Bradford Willard. 14 pp. Dec. 1931.
106. Gas and oil in Potter County, Pennsylvania, by S. H. Cathcart. 31 pp., 3 figs. 1934.
107. Gas in Tioga County, Pennsylvania, by S. H. Cathcart and T. H. Myers. 42 pp., 5 figs., 1934.
108. Geologic structure in the plateaus region of northern Pennsylvania and its relation to the occurrence of gas in the Oriskany sand, by S. H. Cathcart. 24 pp., 2 figs. 1934.
109. Possibility of finding gas in Cameron County, Pennsylvania, by S. H. Cathcart. 16 pp., 3 figs. 1934.
110. Possible occurrence of gas in the Oriskany sand of Elk County, Pennsylvania, by S. H. Cathcart. 21 pp., 3 figs., 1934.
111. Possibility of finding gas in the Oriskany sand of McKean County, Pennsylvania, by S. H. Cathcart. 13 pp., 3 figs., 1934.
112. White Clays of Pennsylvania, by Henry Leighton. 19 pp., 12 figs., 1934.
113. Pennsylvania Geology Summarized, by Bradford Willard. 13 pp., 6 figs., 1935.
114. Subsurface stratigraphy of northwestern Pennsylvania and a resume of gas and oil possibilities of deeper sands, by Charles R. Fettke. 23 pp., 4 figs., 1935.
115. Structure and stratigraphy of Fayette County (preliminary report), by Forrest T. Moyer. 20 pp., 1 map, 1937.
116. Bradford oil field (preliminary report), by Chas. R. Fettke. 17 pp., 5 figs. 1937.
117. Supplementary record of "deep sand" wells in Pennsylvania, by S. H. Cathcart. 27 pp., 5 figs. 1937.
118. Geology of the oil and gas fields of the Tidioute Quadrangle (advance report), by S. H. Cathcart, R. E. Sherrill, and L. S. Matteson. 15 pp., 7 maps, 1 fig., 181 well records. 1938.
119. The Canadian System (technical bulletin), by Geo. H. Ashley. 7 pp. 1938.
120. Structure and stratigraphy of the Brookville Quadrangle (preliminary report), by Chas. K. Graeber. 9 pp., 4 figs., including geologic structure map. 1939.
121. Structure and stratigraphy of the Smicksburg Quadrangle (preliminary report), by M. N. Shaffner. 12 pp., geologic structure map, columnar section, and 25 plotted well records. 1939.
122. Geology of the oil and gas fields of the Hilliards Quadrangle (preliminary report), by R. E. Sherrill and L. S. Matteson. 25 pp., 4 correlation sections, 4 maps, and 238 well records. 1939. (Sold by Division of Documents, 15 cents.)



## MISCELLANEOUS PAPERS

1. The Story of the Survey, by Geo. H. Ashley, 1920. 20 pp. Out of print.
2. The Work of the Survey, by Geo. H. Ashley, 1923. 18 pp. Out of print.
3. The Pennsylvania Geological Survey. Administrative report, by Geo. H. Ashley, 1931. 38 pp., 1 index map. Out of print.

## MAPS

Geologic map of Pennsylvania. 1932. 40 by 62 inches (scale 1 inch equals 6 miles). In 17 colors and 70 patterns. \$1.50.

Map of Bituminous Coal Fields of Pennsylvania. 1929. 35 by 57 inches (scale 1 inch equals 6 miles). 50 cents.

Oil and Gas map of Western Pennsylvania. 1932. 24 by 30 inches (scale 1 inch equals 6 miles), with pipe line maps on back. 25 cents.

Plain base map of Pennsylvania. 1927. 40 by 62 inches (scale 1 inch equals 6 miles). This map shows county and township lines, and principal towns in black and streams in blue. Contains no topographic or geologic data. 25 cents.

## PUBLICATIONS OF PREVIOUS GEOLOGIC SURVEYS

The present Survey has been preceded by the First Geological Survey of Pennsylvania, Second Geological Survey of Pennsylvania, and Topographic and Geologic Survey Commission of Pennsylvania whose publications are all out of print. They can be consulted in the libraries of the larger cities or purchased through dealers in second-hand books.

If the information being sought is given in one of these publications the book reference is given here:

## PUBLICATIONS OF THE UNITED STATES GEOLOGICAL SURVEY

The United States Geological Survey has published many reports on Pennsylvania. Most of them were prepared in cooperation with the State. Of these a large share are no longer obtainable from any official source, but can be consulted in the principal libraries or possibly obtained from dealers in second-hand books. The few folios of the Geologic Atlas of the United States still available can be obtained only from The Director, U. S. Geological Survey, Washington, D. C. at the prices given (stamps not accepted). Several of the economic bulletins can be obtained from the Superintendent of Documents, Washington, D. C., at the prices quoted.

### FOLIOS

- 82. Masontown-Uniontown, by M. R. Campbell. 1902. Out of print.
- 92. Gaines, by M. L. Fuller. 1903. Out of print.
- 93. Elkland-Tioga, by M. L. Fuller and W. C. Alden. 1903. Out of print.
- 94. Brownsville-Connellsville, by M. R. Campbell. 1903. Out of print.
- 102. Indiana, by G. B. Richardson. 1904. Out of print.
- 110. Latrobe, by M. R. Campbell. 1904. Out of print.
- 115. Kittanning, by Charles Butts. 1904. Out of print.
- 121. Waynesburg, by R. W. Stone. 1905. Out of print.
- 123. Elders Ridge, by R. W. Stone. 1905. Out of print.
- 125. Rural Valley, by Charles Butts. 1905. Out of print.
- 133. Ebensburg, by Charles Butts. 1905. Out of print.
- 134. Beaver, by L. H. Woolsey. 1905. Out of print.
- 144. Amity, by F. G. Clapp. 1907. Out of print.
- 146. Rogersville, by F. G. Clapp. 1907. Out of print.
- 160. Accident-Grantsville, by G. C. Martin. 1909. Out of print.
- 162. Philadelphia, by F. Bascom, Clark et al. 1909. Out of print.
- 167. Trenton, N. J.-Pa., by F. Bascom, Darton, Kummel et al. 1909. Out of print.
- 170. Mercersburg-Chambersburg, by George W. Stose. 1909. Out of print.
- 172. Warren, by Charles Butts. 1910. Out of print.
- 174. Johnstown, by W. C. Phalen. 1910. Out of print.
- 176. Sewickley, by M. J. Munn. 1911. Out of print.
- 177. Burgettstown-Carnegie, by E. W. Shaw and M. J. Munn. 1911. Out of print.
- 178. Foxburg-Clarion, by E. W. Shaw, E. F. Lines and M. J. Munn. 1911. Out of print.
- 179. Pawpaw-Hancock, by G. W. Stose and C. K. Swartz. 1911. Out of print.
- 180. Claysville, by M. J. Munn. 1911. Out of print.
- 189. Barnesboro-Patton, by M. R. Campbell, F. G. Clapp and Charles Butts. 1913. 25 cents.
- 223. Coatesville-West Chester, by F. Bascom and G. W. Stose. 1932. 50 cents.
- 224. Somerset-Windber, by G. B. Richardson. 1934. 50 cents.
- 225. Fairfield-Gettysburg, by G. W. Stose and F. Bascom. 1929. 50 cents.  
Hollidaysburg-Huntingdon, by Charles Butts.



## BULLETINS

3. On the fossil faunas of the Upper Devonian, by H. S. Williams. 1884. 36 pp. Out of print.
58. The Glacial boundary in western Pennsylvania, Ohio, Kentucky, Indiana and Illinois, by G. F. Wright. 1890. 112 pp., 8 pls. Out of print.
65. Stratigraphy of the bituminous coal field of Pennsylvania, Ohio, and West Virginia, by I. C. White. 1891. 22 pp., 11 pls. Out of print.
120. The Devonian system of eastern Pennsylvania and New York, by C. S. Prosser. 1894. 81 pp., 2 pls. Out of print.
134. The Cambrian rocks of Pennsylvania, by C. D. Walcott. 1896. 43 pp., 15 pls. Out of print.
136. The ancient volcanic rocks of South Mountain, Pennsylvania, by F. Bascom. 1896. 124 pp., 28 pls. Out of print.
249. Limestones of southwestern Pennsylvania, by F. G. Clapp. 1905. 52 pp. Out of print.
256. Mineral resources of the Elders Ridge quadrangle, Pennsylvania, by R. W. Stone. 1905. 86 pp. 15 cents.
279. Economic geology of the Kittanning and Rural Valley quadrangles, Pennsylvania, by Charles Butts. 1906. 198 pp. 50 cents.
286. Economic geology of the Beaver quadrangle, Pennsylvania, by L. H. Woolsey. 1906. 132 pp. Out of print.
288. Results of spirit leveling in Pennsylvania for the years 1899 to 1905, inclusive, by S. S. Gannett and D. H. Baldwin. 1906. 62 pp. Out of print.
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891. Geology and mineral resources of the Honeybrook and Phoenixville quadrangles, Pennsylvania, by F. Bascom and G. W. Stose. 1938. 145 pp., 11 pls., 20 figs. 65 cents.

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#### WATER-SUPPLY PAPERS

777. Water levels and artesian pressure in observation wells in the United States in 1935. Pennsylvania, pp., 161-169. 30 cents.
817. Water levels and artesian pressure in observation wells in the United States in 1936. Pennsylvania, pp., 260-301. 75 cents.
840. Water levels and artesian pressure in observation wells in the United States in 1937. Pennsylvania, pp., 347-364. 75 cents.

#### TOPOGRAPHIC MAPS

Topographic maps can be obtained only from The Director, U. S. Geological Survey, Washington, D. C., for 10 cents each (stamps not accepted), or from your local stationer. Only the quadrangles heavily underscored are available. Those with light underscore have been surveyed but are not yet engraved.

#### PUBLICATIONS OF THE UNITED STATES BUREAU OF MINES

Technical Paper 590. Analyses of Pennsylvania bituminous coals. 1939. 503 pp., 5 figs. 50 cents. A similar report on Pennsylvania anthracite is in press.







